

Kindly cancel paragraph on page 4 at line 6 of the specification and introduce amended paragraph as follows:

A2  
The single controller system may alternatively comprise a drawing engine scaler instead of any one or all backend scalers responsive to a scaling command to pre-scale at least one surface in the graphics memory and output a scaled version in a scaled surface in the graphics memory; and one of the steps of causing the first display controller and causing the second display controller may comprise one of scaling the at least one of the first surfaces and the at least one of the second surfaces, respectively, using the drawing engine and reading the at least one of the first surfaces and the at least one of the second surfaces, respectively, from the scaled surface.

Kindly cancel paragraph on page 7 at line 1 of the specification and introduce amended paragraph as follows:

A3  
Figure 1 shows a high level block diagram of the invention. Two CRTC controllers 11, 12 are capable of fetching 2 surfaces from memory 50 which can be SGRAM, SDRAM, or any other type of Random Access Memory. These surface can be in a variety of pixel formats including but not limited to RGB (8, 16, 24, 32) and YUV (4:2:0, 4, 2, 2). The output of each CRTC 11, 12 can be displayed on a CRT monitor, TV or flat Panel displays 26, 28 via appropriate converters, encoders 30, 32 and transmitters. The Multiplexers 33, 34 allow routing of the output of each CRTC 11, 12 to either display 26, 28. This allows either display 26, 28 to receive the output from either CRTC 11, 12.

Kindly cancel paragraph on page 7 at line 11 of the specification and introduce amended paragraph as follows:

A4  
Each CRTC contains one or more backend Scaler 14 (refer to Figure 2) that allows the input surfaces to be re-scaled before being combined (overlaid, blended etc.) with

the other surface. Alternatively, prescaling of any surface could be done by the drawing engine 60. A fixed or programmable color space converter 15 is included in one or both pixel data paths, so that combined pixels are in the same color space. For example, a surface can be in YCbCr format (video) and is converted in RGB (graphic) format before being combined with the RGB Windows desktop. Typically, but not exclusively, this is used to display a video surface (video in a window) under a graphic overlay surface (e.g. 2D desktop). Each CRTC 11, 12 also contains a combining unit 18 (or sub picture blending unit) for combining (overlaid or blending) the two surfaces. The output of the combining unit 18 is fed into a scaling unit 24 before being fed into a CRTC in RGB or YUV format.

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Kindly cancel paragraph on page 7 at line 23 of the specification and introduce amended paragraph as follows:

AS Typically, the graphics memory 50 and one or all encoders 30, 32 are external of the discrete device (ASIC) containing the CRTC<sub>s</sub>, the drawing engine 60 and the graphics subsystem manager 36.

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Kindly cancel paragraph on page 8 at line 6 of the specification and introduce amended paragraph as follows:

AB The operation and design of the blending units 18 and other units within the CRTC<sub>s</sub> Scaler 14, 16 and CSC 15 are general and well known to someone skilled in the art and are therefore not described here.

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Kindly cancel paragraph on page 8 at line 10 of the specification and introduce amended paragraph as follows:

M Instead of using the backend scaler 14, 16, the 3D drawing engine 60 of the graphics controller can also be used for pre-scaling surfaces and storing them in memory.